**Students will…**

* measure the diameter of several different types of coins and use the information to calculate area and circumference.
* use the Internet to find the actual diameter of each type of coin and determine the level of accuracy of their measurements.
* weigh each type of coin and make conversions between metric and imperial units.
* use the Internet to find the actual weight of each type of coin.
* measure the height of each type of coin and use that information to solve problems.
* Calculate the actual value of the metal with the highest percentage by weight. Students will need to find out the metal composition of the coins.

**Materials Needed:**

* Computer with Internet access
* Calculator
* Gram scale
* Ruler or caliper

**Web Sites:**

**The Royal Australian Mint <http://www.ramint.gov.au/>**

Infromation about composition, weight and size etc of our coins can be found at <http://www.ramint.gov.au/designs/ram-designs/5c.cfm>

**Teaching the Lesson:**

* You can borrow the scales and possibly the calipers from science teachers at the school.
* When students are measuring the diameter using a ruler, they may have difficulty obtaining a level of accuracy to hundredths of an inch. It is recommended that you have them use calipers instead.
* Errors may result in measuring the diameter because students may be measuring chords instead of diameters. This is a good opportunity to introduce or review the concept of chords and diameters.
* Stress accuracy when students are weighing the coins. If small enough weights are not available, weigh several of the same type of coin at once then average can be found.

**Teacher Notes**

**Selected Answers:**

Students will not get this level of accuracy of course!

|  |  |  |
| --- | --- | --- |
| **Coin** | **Diameter (mm)** | **Weight (grams)** |
| **5 cent** | **19.41** | **2.83** |
| **10 cent** | **23.60** | **5.65** |
| **20 cent** | **11.3** | **28.65** |
| **50 cent** | **31.65** | **15.55** |

The Royal Australian Mint has some really interesting information eg about the design and shape of 50 cent coins since 1966.

Students could also be encouraged to research eg Dr Fred Hollows for whom a special coin is being released this year.

<http://mintissue.ramint.gov.au/mintissue/product.asp?code=803416>